

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of

Applicant(s) : HORN, Carina et al.
Serial No. : 10/771,872
Filed : 4 February 2004
Title : **FLUORIMETRIC DETERMINATION OF ANALYTES BY
AMINE-N-OXIDES AS REDOX INDICATORS**
Docket No. : WP 21394 US
Examiner : ALEXANDER, Lyle
Art Unit : 1797
Confirm. No. : 3760

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

Applicants request review of the rejections raised in the Office Action mailed 17 January 2008. No amendments are being filed with this Request. This request is being filed with a Notice of Appeal. A request for three-month extension of time is enclosed herewith, together with the requisite fee, making the response due 17 July 2008. Review is requested for the reasons stated below.

Claims 1-11 are pending in the present application. Claims 1-11 are rejected.

In the Office Action, claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 6,312,906 to Cass et al. or U.S. Pat. Pub. No. 2002/0160400 by Lakowicz. In support, it is asserted that Cass et al. teach a method of detecting a biological analyte using "4-nitrobenzo-2-oxa-1,3-diazol" as an indicator (col.

8, line 38) that is visualized by fluorescent light emissions. The Examiner further asserted the taught "4-nitrobenzo-2-oxa-1,3-diazol" has been read on the claimed indicator.

Also in the Office Action, claims 1-11 were rejected under §102(b) as being anticipated by Lakowicz. In support, it is asserted Lakowicz teaches a method of detecting biological analytes, such as glucose, etc. using "7-nitrobenzo-2-oxa-1,3-diazol-4-yl" as an indicator that is visualized by fluorescent light emissions. The Examiner further asserted the taught "7-nitrobenzo-2-oxa-1,3-diazol-4-yl" has been read on the claimed indicator and, because the same analytes are detected (e.g., glucose), the reactions meet the claimed limitation of being a redox reaction.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Cass et al. describe a method for detecting a hybridization event between a nucleic acid to be detected and a fluorescent-labeled nucleic acid probe immobilized on a carrier. NBD can be used as a fluorescent marker group (cf., col. 8, line 38). Contrary to the present invention, the principle of this detection is not based on a redox reaction of an N-oxide of an NBD amine or NBD amino derivative according to formula (I) with the analyte to be detected. In contrast, Cass et al. is based on a change of the distance between the fluorescent group and the carrier surface quenching the fluorescent emission (cf., Fig. 2 and col. 4, lines 49-66). The cited reference does not disclose a method for detecting an analyte by a redox reaction and a fluorimetric determination comprising contacting a sample containing the analyte with a detection reagent which contains a compound of the general formula (I) as a fluorimetric redox indicator, nor detecting the presence of the analyte based on the fluorescence emission light emitted by the sample. Moreover, upon viewing the teachings of the instant application, one of ordinary skill in the art would know that contacting a sample containing an analyte with a detection reagent containing a compound of the general formula (I) as a fluorimetric redox indicator will cause a redox reaction, thereby reacting the detection reagent with the analyte. Cass et

al. do not disclose the use of or contacting a sample with a detection reagent containing a compound of the general formula (I) nor detecting an analyte by redox reaction with the detection reagent. Cass et al. therefore cannot be relied upon in support of the instant rejection.

The published application by Lakowicz discloses possibilities for increasing the fluorescent intensity of a plurality of various fluorescent molecules (cf., pgs. 1-2, para. [0013] – [0025]), whereby among others NBD-Cl is mentioned (cf., pg. 4, para. [0066]). As a molecule to be analyzed, glucose is mentioned among others (cf., pg. 4, para. [0067]). The principle of the signal increase hereby is based on the positioning of the fluorescent molecule to be analyzed in a certain distance to metallic particles for enhancing fluorescent emission, whereby a more sensible detection of biomolecules shall be achieved.

As noted above, in light of the present application, one of ordinary skill in the art would know that contacting a sample containing an analyte with a detection reagent containing a compound of the general formula (I) as a fluorimetric redox indicator will cause a redox reaction of the detection reagent with the analyte. However Lakowicz, like Cass et al., does not disclose the use of or contacting a sample with a detection reagent containing a compound of the general formula (I), nor detecting an analyte by such redox reaction with the detection reagent. The cited references only teach the detection of an analyte labeled with fluorescent NBD or NBD-Cl, respectively, and not the detection of an analyte by its redox reaction with the N-oxide of an NBD amine or a derivative thereof according to the present application. There is no basis for the conclusions stated in the Office Action that the cited references teach the redox reaction of the analyte to be analyzed.

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For all of the reasons above, applicants submit that neither Cass et al. nor Lakowicz can be relied upon in support of the instant rejections. Applicants respectfully request that the rejections be withdrawn.

Respectfully submitted,

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